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*31 MAY 1966*  
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Ref: 635 - OD-118

25 May 1966

Post Office Box 8031  
Southwest Station  
Washintong, D. C. 20024

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Subject:  Progress Report - April 1966  
Project No. 635

Gentlemen:

In accordance with contract provisions on the above project, we are enclosing three (3) copies of  Progress Report on Project 635 for the period April 1966. Also included are two (2) copies of our Financial Report for this period.

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Very truly yours,

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LHB:rf

Enc: (3) P.R.  
(2) F.R.

Executive Vice President

Cert. #632634

DECLASS REVIEW by NIMA/DOD

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## 635 PROGRESS REPORT

Period Covered: April 1966  
Document No.: OD-116  
Dated: 17 May 1966

PRESENT STATUS

Design and detailing are essentially complete and the long lead items have been released for fabrication. Release of fabricated parts is approximately 20% complete, the balance being held in anticipation of a modified approach to the film transport design. The description of this new approach is described elsewhere in this report.

25X1 The damaged ☐ Versatile Stereoscope has not yet been repaired by the manufacturer.

PROBLEM AREASTracking Light Sources

The design problems with the high intensity tracking light sources reported previously have not been resolved. However, to prevent further delay in delivery, fabrication of parts has begun with the belief that the remaining design problems will be resolved during the assembly phase.

Delivery Schedule Slippage

There has been an approximate 6 weeks slippage of the delivery date. A couple of factors have caused this slippage in the originally planned delivery date of June 3. Prime among these is the lack of authorization to proceed with the in-

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corporation of an electronic power assist instead of the "mechanical" power assist system as proposed. Acceptance of this change was made dependent on the successful demonstration of a similar system installed in other equipment being manufactured by [REDACTED] This demonstration has been delayed due to technical difficulties and only recently has the system been made fully operational.

Of secondary importance is the absence of the contractor furnished [REDACTED] Versatile Microscope which is still being repaired by the manufacturer. The microscope was received at [REDACTED] in a damaged and unuseable condition. Since we cannot obtain dimensional information on the microscope from the manufacturer we are dependent on having the actual equipment to design a compatible mount. This factor is of secondary importance only because we had an opportunity to obtain most of the essential dimensional data from the damaged equipment while it was at our plant. We will require the microscope, however, before the design can be 100% completed.

#### INTENDED MODIFICATION OF FILM TRANSPORT SYSTEM

The 635 design, as originally specified in the Design Objectives, (paragraph 4.4.1, Feb. 10, 1965) allowed the film transport system to be "motor driven, mechanical or electro-mechanical" insisting only on "simplicity" and "reliability". The equipment, as described in [REDACTED] Proposal No. 635 (March 1965), incorporated a mechanical drive with options for a power assisted feature. The contract was subsequently written around this mechanical system with a "mechanical" assist option.

It is [REDACTED] believe now that the coupling of a purely mechanical drive with a power boosting system results in a system which is needlessly complex. It is our belief that by concentrating on a single mode of film transport, a better and

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more reliable design will be the result. This we feel is in keeping with the goals set forth in the Design Objectives. Consequently, we are recommending that the 635 film transport design be changed somewhat to eliminate two of the operating modes and their attendant complexities. This would result in the elimination of the purely manual drive and the power assisted drive and concentrate on the automatic film transport. This would allow a design which was optimized for this mode of operation, considerable simpler in operation and inherently more reliable due to the decrease in complexity. Specifically, we would realize the following improvements in design and performance over the present configuration.

A) Improved Film Speed Control

The film transport speed would be set by the operator on a conveniently located potentiometer knob. A motor speed feedback system would hold the film spool speed constant at each setting of the potentiometer.

B) Better Film Tension Control

Magnetic particle brakes geared to each of the film spools would allow a positive but light tension to be applied to the film at all times during transport. The magnetic braking action would be controlled by the speed control knob to prevent overrunning of the film spool when the transport speed is decreased rapidly.

C) Increased Range of Film Speeds

The system would be sensitive enough to permit the operator to move the film at speeds as low as 1/2 inch per second yet have sufficient range to slew the film at an average speed of 200 feet per minute (average based on transporting 500 feet of 9 1/2 inch film).

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D) Greatly Simplified Controls

The operator would have only a single control knob for each film. The direction and angle of rotation of the knob would determine the direction and speed of film travel. The operator would not have to be concerned with high and low gear changes or interlocking controls. Controls for reversing the direction of rotation of the film spools with respect to the control knob, for winding emulsion in or out, would, of course, still be available.

E) Reduced Noise and Vibration During Transport

From the standpoint of cost and delivery, this change can be included without exceeding the target cost or causing a further delay in delivery. The main castings, which have already been released, would not be affected, nor would any other fabricated parts have to be scrapped or reworked. Since the design is presently set up for the more complex multi-mode system of film transport it would always be possible to return to the present design at a future date without a redesign of the major castings.

From the standpoint of the ultimate cost of this equipment in production quantities the proposed modification represents a significant potential saving.

PROJECTED WORK FOR MAY

All long lead subcontract work will be placed, and 80% of the fabricated parts released. The design and detailing required to incorporate the modified film transport system will be performed and parts released. It is assumed that there will be no objection to the incorporation of this change since the redesign still satisfies the goals laid down in the Design Objectives and also performs the functions of the originally proposed power assist option.

FINANCIAL REPORT

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The Financial Report for March is included.

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